



The Interstate at 50

HIGHWAY INSTRUMENT TRAINING SCHOOL
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Approximately one year ago now, while I was still an engineer for the Fort Dodge Des Moines and Southern Railway Company, Professor G. Ross Henninger, Assistant Director of the Engineering Extension of this school approached me with the proposition of organizing and supervising a school for Highway Commission Rodmen. The aim being to teach them the rudiments of surveying peculiar to the highway field. After consultation with the president of our railroad, it was finally decided that I would be allowed the time necessary to set up the course and supervise it over a period of about four months.

At the outset of preparation certain problems presented themselves, each having to require a certain amount of legwork and consultation in order to solve them.

Number one problem was instructors — where to get them, how much schooling should they have had. Other problems such as transportation and housing were all met very nicely by the Highway Commission.

Mr. Butter, Chief Engineer of the Iowa Highway Commission and Mr. Gleason, Construction Engineer for the Commission, went over the list of Assistant Resident Engineers with me, and we selected six men, all of whom happened to be alumni of this institution. Each of the men accepted the responsibility immediately upon being asked — in fact, they were quite enthusiastic about the prospect.

It was felt that, since I could spend no more time than two days per week in attendance, that an assistant supervisor should be selected, and Mr. Neil Carpenter, owner of the Ames Engineering and Testing Service, was chosen. Mr. Carpenter spent a half day each day so that between the two of us adequate supervision was attained.

Prior to the opening of the school, a four day conference was held for the instructors, during which time they spent two days with Professor A. P. Twogood of the Engineering Extension Service, who taught them the principles of adult education. Professor Twogood is the instructor for Teacher Training in Adult Education under the Vocational Education Department of the State of Iowa, and the two days spent with him resulted in dispelling many of the doubts and anxieties of the six engineers who were to do the instructing. The remaining two days of the instructors' conference were spent in going over the schedule step by step, coordinating the work so that each man would teach the same method or methods. It was unanimously agreed to by the instructors that the conference was well worthwhile and served to simplify a great deal the teaching load to come. As to the students themselves, many problems had to be solved concerning them. First of all, how would we choose the men to take part in the school? It was decided that some sort of an entrance examination would have to be given in order to select the top 64 men, which incidentally was the maximum number that could be accommodated. The men to take the qualifying examination were first of all selected by the resident engineers and sent to the letting room of the Commission about the first of December. One hundred and sixteen men arrived and took examinations in arithmetic, clerical speed, mechanical aptitude, and written expression. Upon grading the papers sixty four top men were chosen and duly notified. Actually, in passing, it might be noted that

only sixty three arrived for the course, as one man had a major operation performed under emergency conditions the day before the course opened, so did not get to attend. One man dropped out with only two and a half weeks remaining to complete the course, resulting in sixty two men actually completing.

Another major problem to be met was housing, meals, classrooms, and instruments. The instruments were graciously offered by the Civil Engineering Department of the College, so that problem was solved very quickly. The problem of housing, meals, and classrooms was solved by the Memorial Union here on the campus. The Union was able to provide everything necessary, including classrooms. The cooperation extended by the Director of the Union, Col. Harold Pride, and Manager Don Stevens and their staffs proved to be a huge contributing factor to the complete success of the school.

It was contemplated that morale might be a problem to combat during the concentrated ten weeks of instruction, but we found little or no trouble along those lines. Probably the largest contributing factor toward preventing a breakdown in interest and morale was the fact that the Commission furnished full pay to the men while they attended school, plus all expenses, including meals, housing, and transportation home and back every weekend.

Perhaps a short summary of what the course contained would be in order at this time. First we had a brief review of basic arithmetic and mathematics, followed by a three day study of field trigonometry, each of which was based on field use, and did not delve too deeply into theory. We then covered use of levels, transits and other instruments doing field work in stadia surveys, followed by open and closed traverse. Field work of all types was taught, ranging from topography through centerline establishment, cross sections, setting of grades, simple curves, compound curves and spiral curves. Work was of such nature that the practical aspect was stressed, rather than the theoretical. The course ended by having a review of land survey and right-of-way descriptions, as well as other useful but little-used subjects. The course ended by the students writing three two-hour examinations, followed by a graduation dinner and presentation of Certificates.